

element] processor and new output messages from each agent assigned to the [processing element] processor based on the agent's internal state, input messages for the agent, and the agent's decision rules;

- f) on each [processing element] processor, communicating output messages to corresponding agents;
- g) repeating steps e) and f) until a terminal condition is reached; and
- h) outputting a representation of the change in the economy based on the agents' internal states and the output messages.

Claim 11 (amended). The method of Claim [7] 3, further comprising the step of modifying at least one agent's decision rules as the agent is processed.

Claim 12 (amended). The method of Claim [7] 3, wherein the plurality of decision makers comprises a plurality of household decision makers, a plurality of industry decision makers, and a government decision maker.

Claim 16 (new). A multiprocessor computer for predicting a change in an economy, where the economy comprises a plurality of decision makers and economic variables having initial values, said multiprocessor computer comprising:

- a) a plurality of processors, where each processor comprises:
- i) intraprocessor message communication facility within each processor;
  - ii) interprocessor communication resources accessible from each processor with message routing to the plurality of processors;
  - iii) data storage independently accessible from each processor;
  - iv) software storage independently accessible from each processor; and
- b) means for controlling the operation of the plurality of processors, comprising:
- i) means for representing the plurality of decision makers by a plurality of agents, where each agent comprises internal state and decision rules;
  - ii) means for initializing the internal state of each agent;
  - iii) means for inputting the initial values of the economic variables of said economy, where the economic variables are represented as variable conditions;
  - iv) means for assigning each agent to at least one processing unit in the plurality of processing units;

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- v) means for processing each agent, where processing an agent comprises:
    - (1) means for receiving an input message;
    - (2) means for updating the internal state of the agent based on the input message, the current internal state of the agent, the decision rules of the agent, and the values of said variable conditions;
    - (3) means for generating an output message for a destination agent; and
    - (4) means for repeating (1) through (3) until there are no more input messages for the agent;
  - vi) means for determining new values for the variable conditions based on a combination of the effects of the plurality of agents;
  - vii) means for repeating steps v) and vi) until a terminal condition is reached; and
  - viii) means for outputting a prediction of the change in the economy based on a difference of the new values for the variable conditions and the initial values;

Claim 17 (new). The apparatus of Claim 16, further comprising means for modifying at least one agent's decision rules as the agent is processed.

Claim 18 (new). A method of using a multiprocessor computer to predict a change in a military confrontation economy, where the economy comprises a plurality of military capabilities, said method comprising the steps of:

- a) representing the military capabilities by a plurality of agents, where each agent comprises internal state and decision rules;
- b) simulating battlefield communications based on messages among agents;
- c) selecting campaign strategies based on each agent's decision rules; and
- d) outputting a representation of the change in the military confrontation economy.

Claim 19 (new). The method of Claim 1, practiced on a computer comprising a plurality of processing units, additionally comprising the step of modifying the agent's decision rules during the processing of the agent.

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### **Remarks**

In further support of the Claims presented, Applicants provide the following discussion.